Falcon II DPG500ADA

- *±1% Accuracy*
- *Easy to Read 3½ Digit LCD*
- *Pressure or Vacuum Applications*
- *Rugged Extruded Aluminum Case*
- *Dual Alarms with Test Function*

Digital Pressure Gauge
AC/DC Powered
Dual Alarms

ELECTRICAL SPECIFICATIONS

Standard ranges
±15 psi,
0-10 inH$_2$O,
0-1, 0-5, 0-15, 0-30, 0-50, 0-100 psi

Pressure/vacuum reference
Gauge (psig) or absolute (psia)

Optional units
Any engineering units such as kPa, atm, bar, mbar, inHg, mmHg, inH$_2$O, ftH$_2$O, torr, kg/cm^2, cmH$_2$O, oz/in^2

Display (type, size, update rate)
3½ digit LCD, ½" digit height, 3 readings per second nominal

Controls & location
Display zero/span, non-interactive, ±15% range; Setpoint 1 and Setpoint 2, 0-100% range; top-accessible, multiturn potentiometers

Accuracy (linearity, hysteresis, repeatability)
±1% of full scale or better, ±1 least significant digit

Temperature stability
±0.01% of span per degree C (typical)
±0.04% of span per degree C (max) 0-50°C

Alarm deadbands (hysteresis)
1% of of full scale, standard

Alarm outputs
Dual form C (SPDT) relay contacts
Individual Setpoint 1 and Setpoint 2 settings via top-accessible multiturn potentiometers.
HI/LO alarm configuration standard, others available
Relay contacts rated 1A/24VDC, 0.5A/115VAC, non-inductive

Alarm indicators
Bicolor (red/green) LEDs on front panel

Test function
Front panel TEST button, when depressed, toggles both SP1 and SP2 alarm status, independent of pressure input to allow testing of system operation.

Alarm response time
100 milliseconds typical

Power
Any AC source of 8 to 24 VAC 50/60 Hz,
or any DC source of 9 to 32 VDC, 1.0 watt maximum
Optional wall mount power supplies are available to operate on 115VAC/230VAC

ENVIRONMENTAL SPECIFICATIONS

Storage temperature . . . . −45 to +75°C

Operating temperature . . . . −10 to +70°C

Compensated temperature . . . . 0 to +60°C

MECHANICAL SPECIFICATIONS

Size
3.38"W x 2.88"H x 1.65"D (not including pressure fitting or cable strain relief). Add approximately 0.75" to height for pressure fitting and 1" to depth for strain relief and wire clearance.

Weight
9 oz. (approx.)

Material
Extruded aluminum case, epoxy powder coated
Polycarbonate cover, front and rear gaskets

Color
Light gray body, light gray/blue front

Pressure/vacuum connection and material
Brass, ¼" NPT male

Media compatibility
Compatible with air, dry gases, and most non-corrosive media
Consult factory for special media compatibility requirements

Electrical connection
3 foot long, 8-conductor 24AWG cable for power and alarm contacts

Overpressure
3x rated or 200 psi, whichever is less

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Description

The **DPG500ADA** is ideal for AC/DC powered applications that require continuous pressure or vacuum display and dual setpoints (alarms).

The **DPG500ADA** is powered by any AC source of 8 to 24 VAC 50/60 Hz, or any DC source of 9 to 32 VDC. No recalibration is needed, and no jumpers need to be moved to use either AC or DC power within the specified range. No polarity needs to be observed when connecting a DC supply. Therefore, the DPG500ADA can be used with inexpensive unregulated AC or DC power sources.

The **DPG500ADA** circuitry includes dual mechanical relay alarm outputs with fully adjustable setpoints in a standard HI/LO alarm configuration. Other standard features of the **DPG500ADA** make the alarm feature easy to set up and use. Bicolor LEDs on the front panel (green = normal, red = alarm) provide a visual indication of alarm status. Setpoint 1 and Setpoint 2 buttons allow viewing the setpoints on the gauge display without disrupting normal operation. To test system installation and operation, a front-panel TEST button, when pressed, toggles the alarm output status, independent of system pressure.

Electrical Connection

Connection to the **DPG500ADA** is made with the 8 conductor cable at the gauge rear. The **DPG500ADA** will operate on either AC or DC power, there is no polarity to be observed; simply connect an AC supply of 8 to 24 VAC, 50/60 Hz, or a DC supply of 9 to 32 VDC to the orange and yellow wires to activate the gauge.

The remaining wires are for the alarm relay contact outputs. The color code is as follows:

SETPOINT 1		SETPOINT 2	
Normally Closed (NC)	BLACK	Normally Closed (NC)	GREEN
Common (C)	RED	Common (C)	BROWN
Normally Open (NO)	WHITE	Normally Open (NO)	BLUE

Operation

Mount the **DPG500ADA** on the pressure or vacuum system, wire the leads as indicated, and apply power to the supply leads to activate the display. The gauge is powered on whenever a supply voltage is applied. The type and magnitude of the supply voltage have negligible effect on the gauge calibration.

In normal operation, the system pressure is displayed on the gauge LCD. In addition, the **DPG500ADA** circuitry compares the system pressure to two independent setpoint levels; these are referred to as Setpoint 1 and Setpoint 2. These setpoint levels are adjustable via top-accessible controls (see "Calibration") and may be viewed by pressing either the SP1 or SP2 buttons on the front of the unit. Pressing SP1 or SP2 will switch the display to show, and allow adjusting the corresponding setpoint only; normal operation of the alarm outputs is not otherwise affected.

Alarm status is easily seen on the two alarm indicator LEDs in the corner of the SP1 and SP2 buttons. A GREEN indication is a "clear" or non-alarm configuration; RED is an alarm condition. If a particular setpoint is configured as a HI alarm, the **DPG500ADA** will provide a RED alarm indication when the system pressure _exceeds_ the current setpoint. If a particular setpoint is configured as a LO alarm, the **DPG500ADA** will provide a RED alarm indication when the system pressure _falls below_ the setpoint. Alarm configurations are set at the factory at time of manufacture and may be set to HI/HI, HI/LO, LO/HI, or LO/LO configuration.

See Appendix A for additional information on using the **DPG500ADA** alarm outputs.

For system setup, testing, and troubleshooting, the TEST button is provided. This button, when pressed, toggles the current state of the alarm outputs. Therefore the alarm outputs may be "exercised" on demand without the need to vary the system pressure to test devices, annunciators, etc. connected to these outputs.

Calibration

Lift calibration label to access individual controls on the top of the unit to adjust the zero and span of the display.

For GAUGE reference units the setting of the "Zero" control is correct when the gauge reads zero, with the "–" sign occasionally flashing, when the pressure port is open to the ambient.

Correct calibration of the "Span" control requires an accurate pressure reference and should only be attempted if the user has access to a pressure reference of known accuracy. The quality of the calibration is only as good as the accuracy of the calibration equipment and ideally should be better than ±0.3% for full gauge accuracy.

If "Span" calibration is attempted, the "Zero" calibration should be done first. Then, apply full-scale pressure to the pressure port and adjust the "Span" control for the correct reading.

Calibration of ABSOLUTE reference units is more difficult and is not recommended in the field, unless the user has access to equipment required to calibrate absolute-reference units, such as vacuum generation or atmospheric pressure measurement equipment. Users who do not have the required calibration equipment should return the gauge to Cecomp Electronics for certified recalibration. N.I.S.T. traceability is available.

To adjust alarm Setpoint 1, press and hold the SP1 button. When holding the SP1 button, the display will show the current setting for Setpoint 1. Turn the top-accessible Setpoint 1 control. Repeat the procedure by pressing the SP2 button to adjust Setpoint 2.
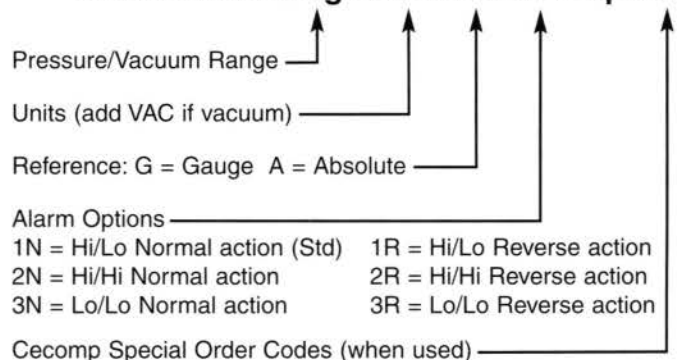
General

An important consideration in successful application of the **DPG500ADA** is to ensure that the gauge supply voltage does not fall below 8 VAC RMS if AC power is used, or 9 VDC if DC power is used. Operation with less than these values may cause erratic or erroneous readings or alarm operation.
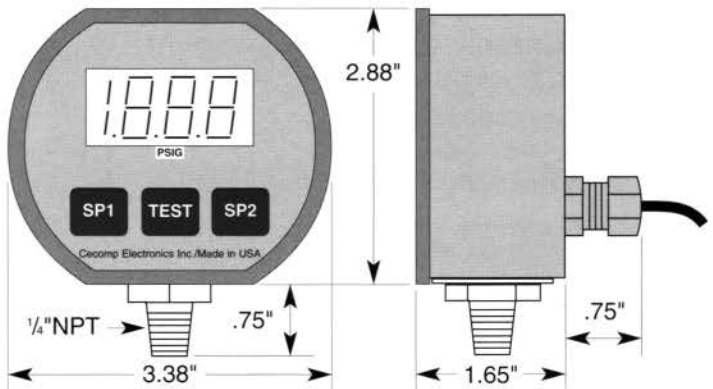
Cecomp Electronics maintains a constant effort to upgrade and improve its products, therefore specifications are subject to change.

MODEL NUMBERING SYSTEM
DPG500ADA range units ref-alrm-special

Pressure/Vacuum Range

Units (add VAC if vacuum)

Reference: G = Gauge   A = Absolute

Alarm Options
1N = Hi/Lo Normal action (Std)	1R = Hi/Lo Reverse action
2N = Hi/Hi Normal action	2R = Hi/Hi Reverse action
3N = Lo/Lo Normal action	3R = Lo/Lo Reverse action

Cecomp Special Order Codes (when used)

Example: DPG500ADA50PSIG-1N = DPG500, AC/DC power, with alarms, 0-50psig, HI/LO, normal action alarm relays